

APPENDIX.

Appendix.

•The following is a list¹ of plants and seeds which were used as articles of food by the poorer classes during the famine of 1876-77 in the different subdivisions of the Belgium district:

CLASS I.—Seeds.

1. Seeds of the *Bambusa arundinacea* and other species, *veluche tándul* (M.); 2. *Indigofera glandulosa*, *godí bármón* (K.), *gahun bármón* or *gavácha malmándi* (M.); 3. *Indigofera linifolia*, *malmándi* or *javalai malmándi* (K.), *jáváricha malmándi* or *barbora* (M.); 4. *Jasminum latifolium*, *kusari* (M.); 5. *Amaranthus frumentaceus*, *ádvi rájgira* (K.); 6. *Tamarindus indica*, *chinch* (M.); 7. *Acacia arabica*, *bábhul* (M.); 8. *Sophora tomentosa*, *káshi bábhul* (M.); and 9. *Erythrina indica*, *pángára* (M.).

CLASS II.—Herbs and Rinds.

10. Husks of the *Penicillaria spicata*, *sejji* (K.) or *bájri* (M.); and 11. the rind of the ripe fruit of the *Musa paradisiaca* and other species, *kelyáchi sál* (M.).

CLASS III.—Fruits.

12. The unripe fruit and blossom of the *Musa paradisiaca* and other varieties, *keliche phul áni phal* (M.); 13. *Coccinia indica* (unripe fruit), *tondli* (M.); 14. *Randia uliginosa* (unripe fruit), *pendhare* (M.); 15. *Opuntia dillenii* (ripe fruit), *niedung* (M.); 16. *Ficus indica* (unripe fruit), *vad* (M.); 17. *Ficus tjiela*, *pimpri* (M.); and 18. *Ficus glomerata*, *umbar* (M.).

CLASS IV.—Sprouts.

19. The young sprouts of the *Bambusa*, *veluche komb* (M.); and 20. sprouts of the *Caryota urens*, *surmáddáche komb* (M.).

CLASS V.—Leaves of Stalks and Herbs.

21. The herb *Lactuca gorceana*, *pátri bháji* (M.); 22. The herb *Lactuca* (?), *háli bháji* (M.); 23. Leaves of the *Moringa pterygosperma*, *shevgyáchi bháji* (M.); 24. The herb *Portulaca quadrifida*, *chirgoli* (M.); 25. The herb *Amaranthus frumentaceus*, *ádvi* (wild) *rájgira* (K.); 26. The herb *Amaranthus polygamus*, *chavli* (M.); 27. Leaves of the *Morus indica*, *shetut* (M.), *chichuk* (K.); 28. Leaves of the *Cassia* (?), *guradi* (or hill) *hanavri* (K.); 29. Leaves of the *Cassia sophora*, *yemini* (or buffalo) *hanavri* (K.); 30. Leaves of the *Cassia auriculata*, *tarota hanavri* (K.), *tarvad* (M.); 31. Leaves of the *Cassia tora*, *tarota* (M.); 32. Leaves of the *Sophora tomentosa*, *káshi bábhul* (M.); 33. Leaves of the *Tamarindus indicus*, *chinch* (M.); 34. *Tribulus terrestris*, *gokhru* or *saráta* (M.); 35. *Ficus glomerata*, *umbar* (M.); 36. *Ficus tjiela*, *pimpri* (M.); 37. *Santalum album*, *chandani* (M.); 38. A creeper not identified, *jiti* (M.); 39. A creeper not identified, *mustik* (M.); 40. A creeper not identified, *maili* (M.); 41. *Achyranthes aspera*, *agháda* (M.); 42. Not identified, *yelvat* (M.); 43. Not identified, *savdadu* (M.); 44. *Indigofera glandulosa*, *malmándi* (M.); 45. *Cocculus villosus*, *dágdí* (M.); 46. *Anethum* (?), *ránshapu* (M.); 47. Not identified, *chomehi* (M.); 48. *Zizyphus rugosa*, *churnu* or *turan* (M.); 49. *Cyanotes axillaris* (?), *ichka* (M.);

¹ Contributed by Surgeon-Major C. T. Peters.

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50. The plant *Tonidium suffruticosum*, *rátan purush* (M.); 51. *Poinciana clata* (P), *saphet sankeshvari* (M.); 52. Not identified, *supari* or *vassú* (K.); 53. Leaves of the *Celastrus paniculatus*, *kanguni* (M.); 54. *Leucas linifolia*, *tumba* (M.); 55. Not identified, *murchand* (M.); and 56. *Dæmia extensa*, *kurtigia* (M.).

CLASS VI. — Pith.

57. The pith of the Plantain *Musa paradisiaca* and other varieties, *kelicha gábha* (M.); 58. The pith of the wild plantain *Musa textilis*, *chavaicha gábha* (M.); 59. The pith of the *Caryota urens*, *surmádácha magaj* (M.).

CLASS VII. — Roots and Tubers.

60. *Colocasia*, and *Caladium* and *Arum* (certain varieties) tuber, *alu* (M.); 61. *Dioscorea bulbifera* tuber, *kadu kárandá* (M.); 62. *Musa textilis*, *chavaicha gadda* (M.); 63. *Polygonum* (P), *sogali mula* (M.); and 64. Not identified, *phirsi mula* (M.).

The following notes will help to form an idea as to the nutritive value or otherwise of these substances. It is to be regretted that some of the specimens were received in a semi-putrid state and others without their fruits or blossoms and could not be identified. Others such as the rhizomes, tubers, and seeds had to be grown before some of them could be identified, while some although they had been successfully grown, the writer of this article having had to leave Belgaum, the plants had to be left behind before they blossomed.

CLASS I. — Eaten in all Seasons.

The seeds *veluche tándul* and the sprouts *veluche komb* of the *Bambusa arundinacea* and *B. spinosa*. These seeds of the wild bamboo according to Buchanan are gathered for food in Maisur and the South Konkan. In Belgaum it is not an unusual thing to see the thorny varieties of the bamboo producing seeds, which exactly resemble oats in size and appearance and are called the bamboo rice. The tender shoots are used in making curries and pickles. The seeds of the *JASMINUM LATIFOLIUM*, *kusarichi phale*, are pounded into flour and made into cakes. The fruits ripen in May and June when they are eagerly sought after, being wholesome. The seeds of the *AMARANTHUS FRUMENTACEUS*, *rágira*, are generally used for making bread or cakes especially during fasts. The tops, stalks, and leaves of several wild varieties of the *AMARANTHUS* are generally used as spinach; those of the *A. POLYGNONOIDES* being especially considered a delicacy and ordered for invalids.

AMARANTHUS POLYGAMUS *chavli*, *A. OLERACEUS tándulja*, and *A. FRISTIS máth*, are cultivated and considered to be very wholesome as pot-herbs.

MUSA PARADISIACA AND OTHER VARIETIES, *kel*.

The unripe fruit, the blossom and the pith (*kelichágábha*) are usually eaten cooked as vegetable curry. Professor Johnstone considers the plantain fruit to approach most nearly the potato in composition and nutritive value.

COCCINIA INDICA, *tondlí*.

This creeper is common in hedges during the rains, the fruit is cooked as a vegetable, the ripe fruit of the cultivated variety is eaten raw.

RANDIA ULIGINOSA, *pendhare*.

The fruit is ovoid about a couple of inches long and of a yellow colour; the unripe fruit is used in curries.

OPUNTIA DILLENI, *nírdung*.

The fruit when ripe is generally eaten by children, it has a faint sweetish taste.

CARYOTA URENS, *surmád* or *bherle mád*.

The fruit of the tree yields a kind of coarse sago. In the Konkan people generally pound the pith and make gruel of it. During the famine this was made into flour with which they made cakes, either alone or mixed with the flour of the *rági Eleusine corocana*.

LACTUCA-GORCEANA, *pátri*.

This herb appears to be the same as that described by Dalzell and Gibson as the *Microrhynches sarmentosus*. There appear to be two varieties.

one stemless, the leaves appear as if attached directly to the root. The other has long stalks and corresponds with Roxburgh's *Prenanthes acaulis* and *P. racemosa*. The latter is common in Zanzibar where, according to Sir John Kirk, K.C.M. G., it is used by the natives as a pot-herb. It is known among them as the wild salad plant. It finds a place in the African flora as *Lactuca goroana* which name has been adopted here. The two varieties mentioned here are found growing at all seasons about houses, roadsides, pasture lands, and old damp walls; taste slightly bitter and are used as vegetables and considered to be a stomachic and very similar in effect to that of the dandelion.

MORINGA PTERYGOSPERMA, shevga.

The leaves, blossoms, and pods are eaten cooked as curries, but they are considered heating and when taken in excessive quantities cause purging.

PORTULACA QUADRIFIDA, chingoli.

A succulent plant, the whole herb is used as a pot-herb. *P. oleracea* and *P. meridiana* are also used as pot herbs; according to Roxburgh the *P. quadrifida* is supposed by the natives to produce stupefaction.

DIOSCOREA BULBIFERA, kadu karanda.

The tuber is eaten by the poorer classes after it has been roasted and then steeped in cold water to take away the bitter taste. (Graham's Catalogue p. 219).

CALADIUM, COLOCASIA, AND ARUMS, alu.

Several varieties of the *Caladium*, *Colocasia*, and *Arum* are cultivated for the tubers which are used as curries, and sometimes they are eaten boiled like potatoes, and taken with salt after the skin has been removed. A little limejuice is added to the wild varieties in order to remove the acid taste that they may possess.

CLASS II.—Eaten in times of Famine.

INDIGOFERA GLANDULOSA, godi or gahun barmand or gavacha malmandi; I. LINIFOLIA, javalai malmand or javoricha malmandi.

The seeds of the *I. glandulosa* are black elongated about a line in length and dotted over with numerous pits on the surface and those of the *I. linifolia* have a white roundish husk which when removed leaves a fine seed resembling poppy seeds, having a smooth surface; found in the cold weather. These grains are made into flour for making bread like the cereals.

ANETHUM (?), Ranshepu.

This plant exactly resembles the *Anethum graveolens, shepu*, in structure and fragrance which is cultivated as a spinaceous vegetable. It is perhaps a wild variety of the *Anethum*.

TAMARINDUS INDICA, chinch.

The seeds are generally eaten roasted by children in ordinary years, and are pounded and boiled in water for sizing country blankets; in times of scarcity and famine, like the mango seeds, they are eaten (Roxburgh). Tamarind leaves are slightly acid and are sometimes eaten in curries.

ACACIA ARABICA, babbul.

The seeds and pods of the *babbul* are used in the hot season as food for sheep and goats when grass is scarce. If properly shelled and cooked *babbul* seeds would afford a wholesome and nutritious food.

SOPHORA TOMENTOSA, kashi babbul.

The pods sent resembled the pods of this plant, if so they are not generally used as food, and according to Rumphius the seeds which are very bitter are considered a specific in cholera. The seeds of some of the *Acacia*, however, as the *Acacia leucophloea*, are eaten ground and mixed with flour and the pods used as vegetable. The leaves as well as the seeds were used as articles of food.

ERYTHRINA INDICA, pangara.

The seeds of the Indian coral tree are not known in ordinary seasons.

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to have been used as an article of diet; when boiled they are believed to resemble beans.

PENICILLARIA SPICATA, *sejji* or *bājri*.

The husks were evidently used with a view to add to the bulk of the flour prepared from other articles.

MUSA PARADISIACA, *kel*.

The rind of the ripe plantain was used even by the upper classes, cooked as curry.

FICUS INDICA, *vad*; *FICUS TIELA*, *pimpri*; *FICUS GLOMERATA*, *umbar*.

The fruits of these plants were used in their green state, or simply boiled and taken with salt and gave rise in many cases to fatal diarrhoea. If cooked properly they might have been wholesome, as they are generally eaten by birds. The leaves of the *pimpri* and *umbar* are stated to have been also used as food.

MORUS INDICA, *shetut pāla* (M.), *chichuk* (K.).

The leaves are a favourite food of the silk-worm which feeds greedily on the tender leaves. It is considered to be wholesome as a vegetable by the natives. They also use it as a remedy for *achra* a sort of venous tumour forming under the tongue.

SANTALUM ALBUM, *chandana*, *shrigantha*.

The leaves of the sandalwood are generally given to goats which are very fond of the tender tops. They are considered to be wholesome as an article of food.

CASSIA AURICULATA, *tarvad*; *CASSIA TORA*, *tarota*; *CASSIA SOPHORA*, *kasunde* (M.), *yemmina novri* (K.); *CASSIA* (?), *gurdna novri* (K.).

The word *gurd* in Kánarese means wild and *yemmi* a buffalo, indicating that the plant is eaten by buffaloes. *Yemmina novri* is said to be wholesome and used as *chatni* or relish. The *Cassia auriculata* is sometimes used as vegetable. *Shegunshi*, *Cassia* (?), is said to be a bushy plant growing on hill sides throughout the year. The leaves are said to be wholesome when cooked as spinach. They are also used as a cure for rheumatism and supposed to be heating.

ZIZYPHUS RUGOSA, *toran* or *churan*.

The fruit is eaten, the leaves are mucilaginous and may be wholesome. The wild silk or *tasar* worm feeds on the leaves of this plant and that of the *Z. jujuba* or *bor* tree.

POINCIANA ELATA, *āphel sankeshvari*.

The plant is probably the *P. elata* which is the only one of the *Poincianas* bearing white flowers. The leaves are said to be wholesome.

MUSA TEXTILIS, *chavai* or *rānkai*.

The pith and root of this plant would have similar properties to those of the plantain, and as the root stock contains a large quantity of starch it would be useful as an article of food.

POLYGONUM (?), *sogalichi muli*.

This plant grows by the river sides. Roxburgh says some of the *Polygonums* are eaten by cattle greedily.

The undermentioned plants are well known for their medicinal properties, and with a few exceptions would not be considered as wholesome articles of food:

TRIBULUS TERRESTRIS, *sarāta* or *gokhru*; *ACHYRANTHES ASPERA*, *āghāda*; *COCCULUS VILLOSUS*, *dāgadi*.

The leaves of the *dāgadi* are made into curry and given to patients who are under a course of the roots (Roxburgh).

IONIDIUM SUFFRUTICOSUM, *ratan purush*.

The leaves and tender stalks are mucilaginous.

CELASTRUS PANICULATUS, *kanguni*; *LEUCAS LINIFOLIA*, *tumba*; *DGEMIA EXTENSA*, *kurtigia*.

Besides those already mentioned the following plants could not be identified: *Jiti* a creeper, *mustik* a creeper, *mulli* a creeper, *yelvati*, *saudadu*, *chonchi* vegetable, and *ichka* plant. *Ichka* is perhaps the *Cyanotis axillaris* which Dr. Gray mentions in his Sholapur List. *Murchandi*, *supari* or *vassu* leaves, and *phirsi* a root.